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Effectiveness of a community based nurse-pharmacist managed pain clinic: A mixed-methods study

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ABSTRACT

Background: Chronic pain is predominantly managed in primary care, although often ineffectively. There is growing evidence to support the potential role of nurses and pharmacists in the effective management of chronic pain.
Objectives: To evaluate the effectiveness of a pain clinic jointly managed by a nurse and pharmacist.
Design: A mixed-methods design consisting of qualitative interviews embedded within a quasi-experimental study.
Settings: A community-based nurse-pharmacist led pain clinic in the north of England.
Participants: Adult chronic pain (non-malignant) patients referred to the pain clinic.
Methods: Pain intensity was the primary outcome. Questionnaires (the Brief Pain Inventory, the Hospital Anxiety and Depression Scale, the SF-36 and the Chronic Pain Grade questionnaire) were administered at the baseline, on discharge and at 3-month post-discharge (Brief Pain Inventory and Hospital Anxiety and Depression Scale only). Patient satisfaction was explored using face-to-face, semi-structured qualitative interviews.
Results: Seventy-nine patients with a mean age of 46.5 years (SD ± 14.4) took part in the quasi-experimental study. Thirty-six and nine patients completed the discharge and 3-month follow-up questionnaires respectively. Compared to baseline, statistically significant reductions were noted for two of the outcome measures: pain intensity ($P = 0.02$), and interference of pain with physical functioning ($P = 0.02$) on discharge from the service. Nineteen patients participated in qualitative interviews. The patients were, in general, satisfied with the quality of service. Four contributing factors to patient satisfaction were identified: ample consultation time, in-depth specialised knowledge, listening and understanding to patients' needs, and a holistic approach.
Conclusions: Nurse and pharmacist managed community-based pain clinics can effectively deliver quality pain management services as they offer an interdisciplinary holistic approach to pain management. Such services have the potential not only to reduce the burden on secondary care but also decrease long waiting times for referral to secondary care. Further research is required to support the development of evidence based referral guidelines to such services.

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What is already known about the topic?

- Chronic pain management in primary care is often inadequate and multidisciplinary care is required to effectively manage pain.
- The availability of and access to multidisciplinary pain clinics is limited.
- The roles of nurses and pharmacists in chronic pain management are expanding.

What this paper adds

- This paper shows how a mixed-methods design may be used to evaluate an innovative community based nurse-pharmacist managed pain service.
- The findings suggest that the multidisciplinary pain clinic managed by the nurse and pharmacist can effectively manage chronic pain in primary care.
- The findings indicate that chronic pain patients are likely to benefit from sufficient consultation time, specialised knowledge, and a holistic approach from a pain service, which was provided by this nurse-pharmacist managed pain clinic.

1. Introduction

Chronic (non-malignant) pain affects millions of adults globally, disrupting their personal, social and professional lives, and contributing significantly to the overall burden on healthcare systems and society. Chronic pain patients utilise significantly more healthcare resources than patients with other long term conditions (Blyth et al., 2004; Breivik et al., 2006). In the US, the overall annual cost associated with chronic pain has been estimated to range from $560 to $635 billion (£341 billion to £387 billion), more than the annual costs of heart disease ($309 billion; £188 billion), cancer ($243 billion; £148 billion), and diabetes ($188 billion; £114 billion) (Gaskin and Richard, 2012).

In most instances, chronic pain patients are managed within primary care. However, issues like under treatment of chronic pain (Hanlon et al., 1996), abuse of opioid analgesics (Couto et al., 2009), lack of monitoring of repeat prescriptions leading to deteriorating patients' quality of life (The Accounts Commission for Scotland, 1999), and increasing burden on secondary care have been well documented in the literature, necessitating development of specialised community-based pain management services. There is growing evidence to support the role of nurses and pharmacists in chronic pain management (Hadi et al., 2014a; Jones et al., 2002; Ryan et al., 2006). Pharmacist-led interventions have been shown to reduce pain intensity, improve physical functioning and reduce adverse events among chronic pain patients (Hadi et al., 2014a). Similarly, nurse-led interventions have been shown to reduce the chronic use of non-steroidal anti-inflammatory drugs (NSAIDs) (Jones et al., 2002), and improve physical functioning (Ryan et al., 2006) and self-management skills.

Keeping in view the potential usefulness of nurses and pharmacists in chronic pain management and the limited capacity of general practitioners (GPs) in managing chronic pain, the Leeds Community Healthcare NHS Trust, part of the UK National Health Service, initiated a nurse-pharmacist managed pain clinic for patients with chronic pain in the community setting. The working of the clinic has been described in detail elsewhere (Hadi et al., 2012). Briefly, the role of the pharmacist, who spent 1 day per week at the pain clinic, was to conduct medication review with the aim of ensuring safe and effective use of analgesics. The nursing intervention focused on educating patients about pain, clarifying any misconceptions, and encouraging patients to develop self-management skills. A retrospective study reported a significant reduction in pain intensity ($P < 0.001$) (Briggs et al., 2008). However, the small sample size and the use of pain scores alone as an outcome measure, limit the usefulness of the findings. The present study was designed to further build on the existing research evidence on the effectiveness of the pain clinic using a mixed-methods approach.

2. Methods

Among various mixed-methods designs available, an embedded design consisting of a quasi-experimental (quantitative) study and a descriptive qualitative study was chosen (Creswell and Plano-Clark, 2011). In embedded design there is one principal method (qualitative or quantitative) and it is given priority depending on the purpose of the research and the other method provides supportive data (Creswell and Plano-Clark, 2011). The embedded design is particularly useful when a single dataset is not sufficient and different questions requiring different methodologies need to be answered within a single study (Creswell and Plano-Clark, 2011). The rationale for choosing an embedded design has been discussed in detail elsewhere (Hadi et al., 2013a). The study was conducted at a pain clinic, situated in the north of England. The ethics approval was obtained from the local NHS ethics committee (Ref. No. 11/YH/0415).

All patients referred to the pain clinic were assessed for eligibility to participate in this study by the first author (MAH) and/or clinical nurse specialist (KM). Patients meeting the following inclusion criteria were invited to participate: age >18 years, history of pain for >3 months and adequate ability to read and understand English. Pregnant women and patients with malignant pain, psychiatric disorders or requiring acute medical/surgical intervention for their pain relief were excluded. The required sample size was calculated to be 79, with 80% power, a 95% confidence interval, a minimum clinically important difference of 1.1 points (on 0–10 Numerical Rating Scale for pain intensity) and anticipating a 15% dropout rate (Eng, 2003). The minimum clinically important difference was considered for sample size calculation so that the study was powered sufficiently to at least detect minimum clinically important differences.

2.1. Outcome measures

Outcome measures included: pain intensity (primary), physical functioning, emotional functioning, quality of life